of-flight analysis allows for both large-area screening for edema using bioimpedance and then localized measurement of suspect areas using spectrophotometric time-of-flight analysis.

The foregoing descriptions of specific embodiments of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, and many modifications and variations are possible in light of the above teaching. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the claims appended hereto and their equivalents.

What is claimed is:

1. A pressure sore detection system for detecting pressure sores in human tissue comprising:

a memory device configured to store a plurality of values corresponding to a plurality of code sequences wherein said plurality of values is located by a plurality of cell addresses;

a code selector configured to select a first code sequence and a second code sequence from said plurality of code sequences during operation of said pressure sore detection system and wherein said code selector changes from said first code sequence to said second code sequence during said operation of said pressure sore detection system;

an address sequencer coupled to said memory device and said code selector configured to provide cell addresses from said plurality of cell addresses corresponding to said first selected code sequence and said second selected code sequence;

a signal generator coupled to said code selector configured to generate a first digital modulation signal and second digital modulation signal representing said first selected code sequence and said second selected code sequence;

an optical illumination source of a first wavelength coupled to said signal generator configured to receive said first digital modulation signal and said second digital modulation signal and configured to transmit a first modulated optical signal of said first wavelength along an optical transmission path to said human tissue in response to said first digital modulation signal and transmit a second modulated optical signal of said first wavelength along said optical transmission path to said human tissue in response to said second digital modulation signal;

a detector configured to be optically coupled to said human tissue configured to receive said first and second modulated optical signal after transmitting to said human tissue;

a second signal generator configured to generate a third digital modulation signal representing a third code sequence, wherein said third code sequence and said second code sequence have the same ordering of code elements and begin at different code elements;

a second optical illumination source of a second wavelength coupled to said second signal generator configured to receive said third digital modulation signal and configured to transmit a third modulated optical signal of said second wavelength to said human tissue in response to said third digital modulation signal;

a processor coupled to said detector configured to derive a plurality of temporal transfer characteristics for said first, second and third modulated optical signals and configured to detect said pressure sores based on said temporal transfer characteristics; and

a blinking indicator coupled to said processor configured to increase alert level by adjusting frequency of blinking based upon detection of said pressure sores.

2. The pressure sore detection system of claim **1** further comprising:

a delay component optically coupled to said optical illumination source configured to increase length of said optical transmission path.

3. The pressure sore detection system of claim **2** wherein said delay component further comprises a reflective surface.

4. The pressure sore detection system of claim **1** wherein said processor is configured to determine an absorption coefficient of said human tissue and configured to determine scattering characteristics of said human tissue.

5. The pressure sore detection system of claim **1** wherein said processor is configured to calculate oxygen level in said human tissue.

6. The pressure sore detection system of claim **1** wherein said processor is configured to determine water content of said human tissue.

7. The pressure sore detection system of claim **1** wherein said processor is configured to determine hemoglobin concentration of said human tissue.

8. The pressure sore detection system of claim **1** wherein said code sequence is circular.

9. The pressure sore detection system of claim **1** wherein said code sequence is a Galois code.

10. The pressure sore detection system of claim **1** further comprising:

a multidimensional reconstruction processor coupled to said processor configured to generate a multidimensional image based on said first modulated optical signal, said second modulated optical signal and said third modulated optical signal.

11. A method for detecting pressure sores in human tissue comprising:

storing a plurality of values corresponding to a plurality of code sequences wherein said plurality of values is located by a plurality of cell addresses;

selecting a first code sequence from said plurality of code sequences during operation of a pressure sore detection system;

changing from said first code sequence to a second code sequence during said operation of said pressure sore detection system;

providing a first cell address from said plurality of cell addresses corresponding to said first selected code sequence;

providing a second cell address from said plurality of cell addresses corresponding to said second selected code sequence;

generating a first digital modulation signal associated with said first selected code sequence;

generating a second digital modulation signal associated with said second selected code sequence;

generating a first modulated optical signal of a first wavelength based on said first digital modulation signal;

generating a second modulated optical signal of said first wavelength based on said second digital modulation signal;

transmitting said first and second modulated optical signal of said first wavelength to said human tissue;

receiving a first modified version of said first modulated optical signal after transmitting to said human tissue;